Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-22 (cancelled)

23 (new): A method for monitoring the progression of a plume of escaped dangerous gas, said method comprising:

transmitting sensory data from a first sensor array comprising sensors capable of producing a first response in the presence of a chemical stimulus to a remote location;

transmitting physical data from a second sensor array comprising sensors capable of producing a second response in the presence of a physical stimulus to a remote location, wherein said physical data is generated by a sensor of said second sensor array selected from the group consisting of an optical sensor, a mechanical sensor, a radiation sensor, a thermal sensor and combinations thereof; and

processing said sensory and physical data at said remote location, thus monitoring the progression of said plume.

24 (new): A method of monitoring an environment surrounding a nuclear facility, said method comprising:

transmitting sensory data from a first sensor array comprising sensors capable of producing a first response in the presence of a chemical stimulus to a remote location;

transmitting physical data from a second sensor array comprising sensors capable of producing a second response in the presence of a physical stimulus to a remote location, wherein said physical data is generated by a sensor of said second sensor array selected from the group consisting of an optical sensor, a mechanical sensor, a radiation sensor, a thermal sensor and combinations thereof; and

processing said sensory and physical data at said remote location, thus monitoring said environment.

25 (new): A method of detecting the presence of explosive materials, said method comprising:

transmitting sensory data from a first sensor array comprising sensors capable of producing a first response in the presence of a chemical stimulus to a remote location;

transmitting physical data from a second sensor array comprising sensors capable of producing a second response in the presence of a physical stimulus to a remote location, wherein said physical data is generated by a sensor of said second sensor array selected from the group consisting of an optical sensor, a mechanical sensor, a radiation sensor, a thermal sensor and combinations thereof; and

processing said sensory and physical data at said remote location, thus detecting the presence of explosive materials.

26 (new): The method according to claim 23, 24 or 25, further comprising employing a sensor selection algorithm to determine sensors in said first array.

27 (new): The method according to claim 23, 24 or 25, further comprising selecting each sensor of said first sensor array from the group consisting of a bulk conducting polymer film, a semiconducting polymer sensor, a surface acoustic wave device, a fiber optic micromirror, a quartz crystal microbalance, a conducting/nonconducting regions sensor, a dye impregnated polymeric coatings on optical fiber and combinations thereof.

28 (new): The method according to claim 23, 24 or 25, wherein said monitoring includes monitoring a leakage of volatile gases.

29 (new): The method according to claim 23, 24 or 25, wherein said monitoring includes monitoring emission levels.

30 (new): The method according to claim 23, wherein said monitoring includes tracking and the progression of a plume of gas.

31 (new): The method according to claim 23 or 24, wherein said monitoring includes monitoring a perimeter.

32 (new): The method according to claim 23, 24 or 25, wherein said monitoring includes monitoring gases selected from the group consisting of ambient air, combustible gases, natural gas, hazardous leaks, illegal substances, natural gas, smoke, anesthesia gas, sterilization gas, and combinations thereof.

33 (new): The method according to claim 23, 24 or 25, wherein said monitoring includes detecting, quantifying, classifying or combinations thereof.

34 (new): The method according to claim 23, 24 or 25, further comprising taking corrective measures.

35 (new): The method according to claim 34, wherein said taking corrective measures comprises notifying an observer.

36 (new): The method according to claim 35, wherein said notifying comprises providing a visual or an audible alarm.